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December 1994

ADVANCED  
TECHNOLOGY  
PROGRAM

Federal Agencies' Use of  
Gasohol Limited by High  
Prices and Other Factors







United States  
General Accounting Office  
Washington, D.C. 20548

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Resources, Community, and  
Economic Development Division

B-258825

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B-258825

The Honorable Byron L. Dorgan United States Senate

Dear Senator Dorgan:

To help reduce the nation's dependence on imported oil, the Congress, in December 1991, enacted the National Defense Authorization Act for Fiscal Years 1992 and 1993, which includes a provision directing federal agencies to purchase gasohol (gasoline containing 10 percent ethanol, which is primarily made from corn) when it is available at a price equal to or lower than gasoline. Concerned that gasohol purchases may have increased only slightly since this provision was enacted, you requested that we follow up on a 1992 GAO review of federal agencies' use of gasohol.<sup>1</sup> Specifically, you requested that we provide you with information on (1) federal agencies' gasohol use before and after the act and their potential consumption of gasohol; (2) steps taken by federal agencies, particularly the Department of Agriculture, to encourage the use of gasohol since 1991; and (3) impediments to federal agencies' use of gasohol.

RESULTS IN BRIEF

The total amount of gasohol used by the federal government is unknown because agencies do not maintain data on individual drivers' purchases, which account for about 54 percent of all motor fuel use. The remaining motor fuels are purchased in bulk, and the percentage constituted by gasohol has not increased significantly since 1991. With respect to potential federal gasohol consumption, we found that gasoline consumption in the federal fleet was 269 million gallons in fiscal year 1993. This amount would represent the upper bound of potential gasohol consumption if all vehicles used by federal agencies were refueled with gasohol during that year. If, instead, federal agencies purchased gasohol at the same rate as the general public—7.1 percent of gasoline consumption—they would potentially use 19.1 million gallons.

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<sup>1</sup>GAO provided testimony before the Chairman, Subcommittee on Investigations, House Committee on Armed Services, entitled Federal Agencies' Use of Gasohol (GAO/T-RCED-92-73, June 24, 1992) on the results of this review.

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Since 1991, federal agencies have taken a number of steps to encourage the use of gasohol. For example, the Department of Agriculture issued a policy directive requiring the use of gasohol, depending on its availability and price, and the Department of Defense (DOD) eliminated or tightened federal agencies' exemptions to the use of gasohol that had contributed to limited purchases in the past.

A number of impediments still exist, however, that limit purchases of gasohol by the federal government. The major factor is that the price of gasohol is often not competitive with the price of gasoline. Gasohol is also sometimes not available because of the small number of ethanol and gasohol suppliers in certain locations. In addition, environmental regulations that require the use of clean-burning fuels to reduce emissions may restrict the use of gasohol in some locations or affect its supply and price in others.

#### BACKGROUND

Since the early 1980s, the federal government has encouraged the use of gasohol as a substitute for gasoline to reduce U.S. dependence on imported oil. Executive Order 12261, dated January 5, 1981, requires federal agencies procuring unleaded gasoline to give preference to gasohol whenever feasible. In 1991, the Congress passed the National Defense Authorization Act, which, among other things, directs DOD to procure alcohol-gasoline blends containing at least 10-percent domestically produced alcohol in any case in which the price of the blend is the same as or lower than the price of unleaded gasoline. Also, Executive Order 12759 of April 17, 1991, requires federal agencies operating 300 or more commercially designed motor vehicles to reduce their consumption of petroleum products by 10 percent. One approach to meeting this mandate is through federal agencies' use of gasohol.

Federal agencies obtain gasohol primarily through two methods. First, DOD purchases motor fuel in bulk through the Defense Fuel Supply Center (DFSC) for both defense activities and for federal civilian agencies.<sup>2</sup> Under this bulk fuels program, DFSC asks the government agencies for their regional fuel requirements for a 2-year contract period and then issues regional solicitations for contracts with fuel suppliers to deliver a variety of fuels, including gasoline and gasohol, to federal installations throughout the country. Second, individual federal drivers can purchase fuel at

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<sup>2</sup>Individual federal agencies occasionally purchase motor fuels directly from local suppliers if the federal activity uses less than 10,000 gallons of fuel per year.

gasoline service stations under the federal charge card program. DFSC is responsible for contracting with service station owners to participate in the charge card program. The General Services Administration (GSA) is responsible for issuing the charge cards to users in federal agencies.

Our 1992 review of federal agencies' use of gasohol disclosed that bulk purchases of gasohol had been limited but that DFSC had taken steps to eliminate or tighten federal agencies' exemptions from using gasohol.<sup>3</sup> In addition, we reported that DFSC had encouraged gasohol providers to accept the federal charge card.

USE OF GASOHOL BEFORE AND AFTER 1991

The federal government annually purchased an average of about 1.6 million gallons of bulk gasohol before the Defense Authorization Act and about 2 million gallons after the act.<sup>4</sup> The percentage of fuel constituted by bulk gasohol purchases increased slightly by six-tenths of a percentage point after the act, as table 1 shows. (App. I lists the total contract awards for bulk purchases of gasohol and gasoline by each of the DFSC's eight regions. App. II presents a map that shows the DFSC's regional coverage.)

**Table 1: Average Annual Bulk Fuel Purchases**

Type of fuel	Purchases before Defense Authorization Act		Purchases after Defense Authorization Act	
	Millions of gallons	Percent	Millions of gallons	Percent
Gasohol	1.6	1.0	2.0	1.6
Gasoline	154.1	99.0	121.2	98.4
<b>Total</b>	<b>155.7</b>	<b>100.0</b>	<b>123.2</b>	<b>100.0</b>

In one of three regions in which we conducted interviews with gasohol and gasoline suppliers, we found that DFSC did not obtain most of the gasohol contracted for after 1991.<sup>5</sup> DFSC's records showed that five active

<sup>3</sup>Federal agencies may obtain an exemption from using gasohol because of potential problems associated with gasohol storage and use. A more detailed discussion of exemptions appears later in this report.

<sup>4</sup>We calculated average annual gasohol usage on the basis of contract awards generally made 4 years before and 4 years after the Defense Authorization Act.

<sup>5</sup>We conducted interviews with fuel suppliers in regions 4, 6, and 7. Of the eight regions in the country, these were the only three regions that had solicited contracts for fuel after the 1991 act, as of March 1994, when we started our study.

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gasohol contracts were in effect, amounting to a total of 997,000 gallons of gasohol to be supplied in region 6 over a 2-year period. However, in June 1994 we found that only one of the suppliers was actually supplying gasohol, amounting to 12,000 gallons, under these contracts. The four other suppliers usually supplied gasoline instead.

One fuel supplier told us that his understanding of the contract was that he could supply either gasoline or gasohol except during the oxygenated fuel season, when he would have to supply gasohol. The Environmental Protection Agency's (EPA) regulations, issued under the Clean Air Act, require the use of oxygenated fuels. The regulations require cities with air pollution problems to use gasoline with a higher oxygen content during winter months. One way to achieve a higher oxygen content is to blend gasoline with ethanol. The other fuel suppliers thought that their contracts called only for gasoline.

After we notified DFSC officials in June 1994 that most of the contractors in region 6 were not in compliance with the gasohol contracts, DFSC officials contacted the organizations that had requested gasohol and the contractors to follow up on the terms of the contracts. DFSC received confirmation that additional gasohol supplies will be provided in region 6. One of the DFSC officials in charge of bulk fuel purchases estimated that 451,000 additional gallons of gasohol will be supplied during the remaining contract period. DFSC officials told us that they also took steps to ensure that gasohol is being supplied when called for by contracts in the remaining seven regions.

In determining federal gasohol use, we were able to obtain data only for DFSC's bulk purchases of fuel. However, in fiscal year 1993, approximately 54 percent of the gasoline consumed by the federal government was purchased primarily by individual federal employees using a federal charge card. No data were available for charge card purchases of gasohol because GSA, the agency that administers the federal charge card, does not have the capability of tracking gasohol purchases. This issue is discussed further below.

To identify the potential federal gasohol usage, we determined that the federal government consumed 269 million gallons of gasoline in fiscal year 1993. This amount would represent the upper bound or largest potential for gasohol usage if all vehicles were fueled with gasohol. (App. III shows the number of vehicles owned and gasoline consumed by the federal agencies with fleets of 10,000 or more vehicles.) If federal agencies were to

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mirror public consumption—7.1-percent use of gasohol in 1992—then federal usage of gasohol would be 19.1 million gallons. The impediments to increased federal bulk purchases of gasohol are discussed later.

STEPS FEDERAL AGENCIES HAVE TAKEN SINCE 1991 TO ENCOURAGE THE USE OF GASOHOL Federal agencies with large vehicle fleets have taken a number of initiatives since 1991 to encourage the use of gasohol.<sup>6</sup> Such initiatives include attempting to increase the purchase of bulk gasohol fuels, encouraging service stations that sell ethanol-blended fuels to accept the federal charge card, and encouraging fleet operators to use such fuels. The following are initiatives taken by the U.S. Department of Agriculture (USDA), DOD, and GSA, three of the largest fleet operators. Other federal agencies with fleets of 10,000 or more vehicles have not specifically encouraged the use of gasohol compared to other alternatives. (App. IV discusses the actions taken by these other agencies.)

USDA

USDA is the only federal agency that we identified that has a mandatory internal requirement to use ethanol-blended fuel. On June 26, 1992, the Secretary of Agriculture revised USDA's 1990 policy in order to strengthen the agency's commitment to use ethanol-blended fuels. The 1990 policy had directed USDA employees to purchase and use ethanol-blended fuels when such fuels are available at prices comparable to gasoline prices. Citing the Defense Authorization Act, the revised policy directed all USDA agencies with bulk refueling facilities to request that DFSC procure gasohol when the price of the fuel is the same as or lower than the price of unleaded gasoline. It also directed departmental agencies to refuel their vehicles along the normal travel route with an alcohol-gasoline blend containing at least 10-percent domestically produced alcohol, such as gasohol, if available at a price the same as or lower than that for unleaded gasoline.

According to a USDA official in the office that manages the agency's motor vehicle operations, USDA has taken several other steps to increase the use of gasohol. These include (1) publishing and disseminating to USDA agencies—and other federal agencies upon request—a directory of service stations that sell ethanol-blended fuels; (2) encouraging service stations that sell ethanol-blended fuels to accept the federal charge card; and

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<sup>6</sup>Agencies with 10,000 or more owned vehicles include the U.S. Postal Service, GSA, DOD, and the Departments of Agriculture, Justice, Interior, Treasury, and Energy.

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(3) through fleet management meetings, continuously encouraging vehicle operators to use gasohol. According to the USDA official, a major impediment affecting the increased use of gasohol is that a large number of small, independent service stations that sell gasohol do not accept the federal charge card.

USDA has substantially increased its requests to DFSC for bulk purchases of gasohol since 1991. USDA asked DFSC to purchase about 790,000 gallons of gasohol (13 percent of USDA's bulk gasoline fuel requests of 6 million gallons) before the act. Such requests increased to about 3.9 million gallons (89 percent of bulk gasoline requests of 4.4 million gallons) after the act. Although the requests have increased substantially, DFSC has not been able to make contract awards to satisfy these requests. According to DFSC officials, only one gasohol contract, for 132,000 gallons, has been awarded to USDA since the act. DFSC did not make other gasohol awards for USDA because gasohol bids were not obtained or they were generally not price-competitive with those for gasoline. As previously discussed, the extent of gasohol usage by individual drivers using the federal charge card is not known. USDA attempted to collect data on charge card purchases of gasohol but received only very limited information. Also, the data were not considered accurate because fuel suppliers differed on whether they coded sales as gasoline, gasohol, or another fuel. Also, a large number of fuel suppliers do not specify the type of fuel on the sales receipt.

DOD

In October 1988, DOD issued energy program policy guidance to its departmental agencies, which provided that gasohol should be obtained, when available, in both bulk fuel purchases and service station purchases, when the price of gasohol is the same as or lower than the price of gasoline. In June 1994, DOD revised this policy to incorporate several requirements issued subsequent to the gasohol requirements. The revised policy states that in areas that do not meet air quality standards, applicable local environmental regulations apply. As discussed later, such regulations to reduce vehicle emissions may prohibit the use of gasohol. In all other geographical areas, the revised policy provides that gasohol shall be used if available at a price the same as or lower than the price of gasoline.

With respect to the bulk fuel gasohol purchases for federal agencies, DFSC officials said they have attempted to encourage the increased use of gasohol primarily by eliminating and tightening exemptions from its use. DOD eliminated blanket waivers, which in some cases formerly exempted

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entire agencies from using gasohol because of potential problems with gasohol storage and use. The U.S. Army, the Air Force, and the Postal Service, for example, which are large users of motor fuel, had blanket exemptions from using gasohol before 1991. Since the elimination of blanket waivers, agencies can request exemptions only for a specific activity, and the exemption must fit into one of several specific categories established by DOD. DOD also reduced the categories of allowable exemptions from 11 to 6. Consequently, requests for bulk gasohol increased significantly after 1991 when DOD tightened the exemption criteria. They increased from 5 percent (10 million gallons) to 88 percent (184.1 million gallons) of the total fuel requested. (App. V lists the gasohol exemption criteria.)

In addition, DFSC has increased the number of potential gasohol suppliers through greater advertising for gasohol suppliers in trade journals and newsletters. As a result of this effort, 37 additional fuel suppliers have been added to DFSC's bid mailing list for bulk fuels. In another effort, like USDA, DFSC attempted to increase the number of gasohol providers that accept the federal charge card. In 1992, DFSC surveyed companies selling gasohol to the public to determine if they would accept the charge card. As a result of this survey, DFSC obtained 10 additional contractors.

#### GSA

Section 10 of Executive Order 12759, dated April 17, 1991, on federal energy management requires each federal agency operating 300 or more commercially designed motor vehicles to develop a plan to reduce motor vehicle gasoline and diesel consumption by at least 10 percent by the end of fiscal year 1995 in comparison with fiscal year 1991. Under this order, GSA, in consultation with the Department of Energy (DOE), issued to federal agencies guidance for reducing gasoline consumption. This guidance identifies several ways to meet the 10-percent reduction, including the use of gasohol, oxygenated fuels such as gasoline blended with ethanol, and alternative motor fuels. GSA officials also said they verbally encourage the use of gasohol during meetings with government fleet managers. The Energy Policy Act of 1992, which requires increasing purchases of alternative-fueled vehicles starting with purchases by the federal government in fiscal year 1993, also affects the federal agencies' strategies to meet the 10-percent reduction.

As mentioned earlier, GSA does not now have the capability of tracking gasohol purchases under the federal charge card program. However,

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electronic point-of-sale technology that the petroleum industry is adopting could help GSA obtain data on purchases of specific fuels, including gasohol, in the future.<sup>7</sup> GSA has developed a new charge card that is compatible with electronic point-of-sale technology and is testing the card within GSA. Agency officials anticipate that oil companies, in an attempt to reduce their recordkeeping burden, will voluntarily reprogram their information management systems to accept the new charge card, which will enable the tracking of purchases of specific fuels, including gasohol.

#### IMPEDIMENTS HINDER INCREASED BULK PURCHASES OF GASOHOL BY FEDERAL AGENCIES

DFSC officials told us that while agencies' requests to DFSC for bulk gasohol purchases have greatly increased, DFSC still has difficulty obtaining gasohol from suppliers.<sup>8</sup> A number of impediments still exist that result in limited purchases. The major factor is that gasohol is often not competitively priced compared to gasoline. Higher costs to produce, transport, and store gasohol contribute to this factor. Also, gasohol is sometimes not available because of the small number of ethanol and gasohol suppliers in certain locations. In addition, the 2-year government contract period may raise gasohol suppliers' risks, and new environmental regulations to improve air quality may affect the supply and price of gasohol, although in the latter case it is too early to predict the extent of the regulatory effect.

#### Federal Tax Exemption Does Not Offset Higher Cost of Ethanol

Gasohol production requires the addition of ethanol, which costs more than gasoline. According to information from the Energy Information Administration on average wholesale prices of fuels, in 1993 a gallon of ethanol cost \$1.09, while a gallon of regular unleaded gasoline cost \$0.51. Gasohol made from 10 percent ethanol blended with 90 percent gasoline costs 56.8 cents a gallon. Even after receiving a 5.4-cent exemption from the 14.1 cents per gallon federal excise tax on gasoline, the average cost of a gallon of gasohol would be 0.4 of a cent more than a gallon of gasoline. However, some fuel suppliers located near sources of ethanol and gasoline

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<sup>7</sup>In an electronic point-of-sale system, information about the cardbearer's account is encoded on a magnetic strip on the card. A computerized cardreader at the point of sale reads this information, contacts a data base to get approval of the transaction, and enters into the data base information about the transaction, such as the type of fuel, number of gallons purchased, and the purchase price.

<sup>8</sup>We contacted a total of 50 fuel suppliers in DFSC regions 4, 6, and 7 to determine the impediments to supplying gasohol at a competitive price. We selected these regions because when we started this study in March 1994, they were the only regions that had solicited bulk fuel contracts after the Defense Authorization Act passed in 1991. In addition, we spoke with industry trade associations on this topic.

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might be able to obtain their supplies at a more advantageous price difference than the difference reflected in this average.

#### Gasohol Can Cost More Than Gasoline to Transport and Store

Fuel providers told us that because ethanol and gasohol sources are oftentimes not located in close proximity to fuel providers, gasohol (or the ethanol that would be used in the blending process with gasoline) in many cases must be transported great distances, adding to the cost. In addition to the extra expense of long distribution routes, gasohol cannot be transported by pipeline. Since the alcohol portion of gasohol is soluble with water, pipelines must be water-free or the gasohol will become contaminated. The remaining modes of transportation are railcar and truck, each of which, according to some fuel association officials, is more expensive than pipeline transport.

Some fuel suppliers also told us that if gasohol needs to be stored at some point in the distribution system, it cannot be stored in gasoline tanks unless they are cleaned out and water is removed. Separate storage tanks are not practical because of the additional costs. They said that suppliers cannot risk the possibility of fuel contamination caused by water in gasoline tanks because they are responsible for the quality of the fuel. Supporting this point is our analysis of gasohol exemptions requested by federal agencies. We found that the most common type of exemption requested was related to inadequate storage facilities to keep gasohol supplies separate from gasoline.

#### Gasohol Is Sometimes Unavailable

Some of the fuel providers we spoke with said they had difficulty acquiring a steady supply of gasohol because of the small number of ethanol and gasohol suppliers in certain parts of the country. The high cost of producing, transporting, and storing gasohol may limit the profitability of selling gasohol as compared to gasoline and thus the willingness to supply gasohol. Some fuel providers said that their areas contained no sources of ethanol or gasohol, while others said that they had only one or two sources. Some fuel suppliers also said that gasohol is available only during the oxygenated fuels season and that therefore they cannot obtain supplies year-round.

#### Contract Periods Raise Suppliers' Risk

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Suppliers sell gasohol to the public if they can cover their costs and make a reasonable profit. When suppliers contract with the federal government to supply gasohol, they are required to supply gasohol for a 2-year period at a price that is indexed to the price of gasoline. Some fuel suppliers told us that their risks are higher in supplying gasohol because of this requirement. They stated that they will not be able to recover their costs if gasohol costs, which are dependent on ethanol prices, rise more than gasoline costs during this 2-year period. Some suppliers informed us that they are reluctant to sign a contract with this requirement.

#### Environmental Regulations May Affect the Supply and Price of Gasohol

Finally, environmental regulations may add more pressure to gasohol's supply and price, although it is too early to predict the extent. EPA's regulations require that by 1995, reformulated gasoline, a cleaner burning fuel, must contain a minimum level of renewable oxygenates.<sup>9</sup> Such fuels include reformulated gasoline, oxygenated fuels, and alternative motor fuels. Currently, ethanol, which is made from corn, a renewable resource, is the only oxygenate that qualifies as a renewable energy source. Trade association officials differed widely in their views on how the renewable-oxygenate requirement will affect the supply and price of ethanol and in turn the supply and price of gasohol. These views ranged from "no effect on gasohol" to "no ethanol available for use in gasohol." EPA officials told us it is too early to predict how the requirement will affect the gasohol market. On July 13, 1994, the American Petroleum Institute and the National Petroleum Refiners Association filed a lawsuit against EPA's renewable oxygenate requirement in the United States Court of Appeals for the District of Columbia Circuit. On September 13, 1994, the Appeals Court granted a stay of this requirement pending resolution of the case.

During the oxygenated fuel season, California currently prohibits the use of gasohol because its high oxygen content may lead to greater nitrous oxide emissions. California caps the oxygen content of fuel at 2.2 percent to reduce nitrous oxide emissions. Gasohol has an oxygen content of 3.5 percent. By March 1996, the oxygen cap will be instituted year-round, which will completely prohibit the use of gasohol in the state.

#### CONCLUSIONS

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<sup>9</sup>The Clean Air Act Amendments of 1990 require the use of clean-burning fuels to reduce vehicle emissions.

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While changes in the total federal use of gasohol are not known, bulk purchases of gasohol have achieved only a very modest increase, despite efforts by federal agencies to increase their use. Since we last reported on this issue, impediments, such as those that make gasohol not competitively priced compared to gasoline, the limited availability of gasohol in some locations, and environmental requirements, continue to limit gasohol purchases. Because of the lack of data, federal agencies currently do not know the effect their actions have had on individual drivers' charge card purchases of gasohol. Federal charge card sales may be lower than sales to the public, however, because a large number of small, independent service stations that sell gasohol do not accept the federal charge card. Still unclear are the effects of other requirements, which call for the use of clean fuels, on the price and supply of gasohol. While the use of ethanol in reformulated gasoline and other oxygenated fuels might decrease the availability of ethanol and increase its cost to gasohol producers, such actions could also result in greater overall consumption of ethanol.

-----As requested by your office, we did not obtain written agency comments on a draft of this report. However, we discussed its contents with DFSC officials responsible for bulk fuel purchases; GSA's Assistant Commissioner for Transportation and Property Management, Federal Supply Service, and other GSA officials responsible for fleet management issues; and USDA officials responsible for fleet management. They agreed with the facts presented and suggested minor changes that were incorporated where appropriate. Our work was performed between March and October 1994 in accordance with generally accepted government auditing standards. The scope and methodology of our review are discussed in appendix VI.

As arranged with your office, unless you publicly announce its contents earlier, we will make no further distribution of this report until 14 days after the date of this letter. At that time, we will send copies of the report to interested federal agencies and other interested parties. We will also make copies available on request. Should you need further information, please call me at (202) 512-3841. Major contributors to this report are listed in appendix VII.

Sincerely yours,

Victor S. Rezendes Director, Energy and Science Issues

TOTAL CONTRACT AWARD DATA FOR BULK FUELS PROGRAM SINCE  
THE 1991 NATIONAL DEFENSE AUTHORIZATION ACT

Region	Contract period <sup>a</sup>	Gallons of gasoline	Gallons of gasohol	Total gallons of fuel consumed	Gasohol as a percent of total
1	9/92 - 8/96	13,220,838	0	13,220,838	0.00
2	10/92 - 7/96	29,814,698	0	29,814,698	0.00
3	8/92 - 7/96	75,415,450	60,000	75,475,450	0.08
4	4/93 - 3/95	58,707,000	1,646,000	60,353,000	2.73
5	5/92 - 4/96	27,861,140	418,700	28,279,840	1.48
6	6/93 - 5/95	45,655,145	463,000	46,118,145	1.00
7	11/92 - 10/96	106,011,342	585,690	106,597,032	0.55
8	7/92 - 6/96	23,709,163	2,872,000 <sup>b</sup>	26,581,163	10.80
<b>Total</b>		<b>380,394,776</b>	<b>6,045,390</b>	<b>386,440,166</b>	<b>1.56</b>

<sup>a</sup>Contract awards for 1992-96. The Defense Fuel Supply Center (DFSC) awards contracts for a 2-year period.

<sup>b</sup>DFSC awarded one contract for 2 million gallons of gasohol for a Department of Energy facility in the State of Washington.

DFSC's REGIONAL COVERAGE FOR BULK FUEL PURCHASES

NUMBER OF VEHICLES OWNED AND GASOLINE CONSUMED BY  
FEDERAL FLEETS OF 10,000 VEHICLES OR MORE

Federal agency <sup>a</sup>	Number of (thousands) vehicles	Gallons of gasoline <sup>b</sup>
U.S. Postal Service	183,600	82,581
General Services Administration	133,600 <sup>c</sup>	637
Department of Defense	127,100	85,237
Department of Agriculture	34,900	36,522
Department of Justice	26,000	15,928
Department of the Interior	17,600	14,423
Department of the Treasury	14,300	1,151
Department of Energy	11,700	9,404
<b>Total</b>	<b>548,800</b>	<b>245,883</b>

<sup>a</sup> Agencies with 10,000 or more owned vehicles as of September 30, 1992. <sup>b</sup> Gasoline consumed in fiscal year 1993 by all agency-operated vehicles, including owned, leased, and private vehicles.

<sup>c</sup> Of the 133,600 vehicles owned by the General Services Administration (GSA), the agency operated 2,160 and leased the remaining vehicles to other federal agencies. The 133,600 vehicles consumed about 87.2 million gallons of gasoline. All except 637,000 gallons, which GSA consumed, were consumed by other federal agencies and where applicable are included under the respective agencies' gasoline consumption numbers.

**GASOHOL INITIATIVES OF OTHER FEDERAL AGENCIES WITH LARGE MOTOR VEHICLE FLEETS** Other than those discussed in the letter, federal agencies with large vehicle fleets of 10,000 or more vehicles include the U.S. Postal Service and the Departments of Justice, Interior, Treasury, and Energy. We contacted these agencies to identify the initiatives they have taken to encourage the use of gasohol and to determine the extent of its use.

These federal agencies have not specifically encouraged the use of gasohol compared to other alternatives. For example, the Secretary of the Interior issued a policy statement in fiscal year 1991 that required the use of blended gasoline (ethanol and methyl tertiary butyl ether) when such fuels are available and reasonably priced. Also, as discussed earlier, the

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Department of Energy had consulted with GSA in issuing to federal agencies guidance to consider in reducing gasoline consumption in accordance with Executive Order 12759 on federal energy management. This guidance includes the use of gasohol, oxygenated fuels (such as gasoline blended with ethanol), alternative motor fuels, and other initiatives to improve the fuel efficiency of the existing fleet.<sup>10</sup> The other three federal agencies we contacted had not issued any guidance related to the use of gasohol.

Our review of the federal agencies' plans to reduce gasoline consumption showed that they are focusing a significant effort on increasing the purchases of alternative-fueled vehicles or converting vehicles to use alternative fuels. For example, the U.S. Postal Service, which operates the largest single federal fleet, plans to convert over 7,000 of its vehicles to use compressed natural gas as an alternative fuel by 1996.

Gasohol usage data were not available from the federal agencies we contacted, except for DOE, which estimated gasohol consumption of about 2.6 million gallons (about 22 percent) of the total 12 million gallons of gasoline and gasohol consumed in fiscal year 1993. DOE officials estimate that their gasohol consumption largely represents bulk fuel purchases. Officials from several federal agencies believe, however, that the use of ethanol-blended fuels is increasing, given the Clean Air Act's wintertime requirement to use oxygenated fuels in those locations that do not meet certain carbon monoxide air quality standards. Oxygenated fuels may include gasoline blended with ethanol.

#### GASOHOL EXEMPTION CRITERIA

1. Fuel support is required for multifueled engines currently powering 2-1/2-ton and 5-ton military truck fleets at locations whose multifueled engines must be refueled from gasoline tanks because diesel fuel storage tanks are not available, and performance of these engines is not satisfactory when using gasohol.

2. Motor vehicles used in operational or experimental programs to convert to a clean alternative fuel, or to a test fuel, respectively.

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<sup>10</sup>While section 10 of Executive Order 12759 directs federal agencies to reduce gasoline consumption through various means, section 11 specifically provides for the federal procurement of alternative-fueled vehicles to the maximum extent practicable. The Departments of Treasury and Justice are exempt from these provisions for their vehicles that are used for law enforcement purposes.

3. A partial fleet of exempt vehicles and the supply system is not able to keep two grades of product segregated consistent with sound vehicle management practices.

4. The only available storage tanks for the fuel contain water bottoms from which the water cannot be drawn off to preclude alcohol/gasoline phase separation, only until such tanks have been replaced or modified to permit water removal.

5. The only available storage tanks for gasoline are coated internally with sealant resin systems that are incompatible with alcohol or gasoline-alcohol blends.

6. Carbon monoxide or ozone nonattainment areas requiring the use of oxygenated or reformulated gasoline, respectively, where gasohol is not considered an oxygenated or reformulated gasoline under the Clean Air Act.

Source: Department of Defense 4140.25-M, Volume I-IV, DOD Management of Bulk Petroleum Products, Natural Gas, and Coal, June 1994. Chapter 18 of volume II provides the Department's policy and guidance on gasohol.

#### SCOPE AND METHODOLOGY

To determine federal agencies' gasohol use before and after the 1991 National Defense Authorization Act, we reviewed Defense Fuel Supply Center (DFSC) records containing data on bulk gasohol contract awards. Contract award data were used as a proxy for gasohol use by federal agencies because DFSC does not track actual bulk fuel usage. Also, we could not determine the amount of gasohol purchases by individual federal drivers from commercial service stations under the federal charge card program because the federal agencies do not track such purchases. To identify potential federal gasohol consumption, we obtained data on total motor vehicle fuel consumption as well as gasohol consumption by the general public. We used these data as an estimate of the potential federal gasohol consumption.

To determine the steps taken by federal agencies to encourage the use of gasohol since 1991, we interviewed headquarters officials from the General Services Administration, DFSC, and other federal agencies with fleets of 10,000 or more vehicles. Appendix III provides a list of these agencies and their total fuel consumption.

To determine impediments to federal agencies' purchase and use of gasohol, we conducted a survey of fuel providers in three DFSC regions. We concentrated our efforts in these three regions because they were the only regions that had solicited contracts for fuel since the 1991 National Defense Authorization Act. We made this selection in March 1994 when we started this study. In total, we contacted 50 fuel providers. These fuel providers were chosen from four different groups: (1) fuel providers who were awarded gasoline contracts, (2) fuel providers who were awarded gasohol contracts, (3) fuel providers who bid on but were not awarded gasohol contracts, and (4) fuel providers who received contract solicitations but did not bid on them. We were able to contact the entire universe of gasohol suppliers in the three regions because they were very limited in number. We used a judgmental sample to select fuel providers from the other three groups, and therefore the results are not projectable to the general population of fuel providers. However, we chose the largest gasoline contractors representing about 70 to 90 percent of the gasoline procured in the regions. We also chose the largest gasohol bidders on the basis of total gallons bid and contract size. We selected several fuel providers in each of the three regions who received fuel solicitations but did not bid on them.

We also discussed supply impediments with representatives from the American Petroleum Institute, the Society of Independent Gasoline Marketers Association, and the Renewable Fuels Association. In addition, we contacted officials at the Environmental Protection Agency and the California Air Resources Board to discuss current and future environmental regulations that may affect the supply or price of gasohol.

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